Head Protection

Protecting employees from potential head injuries is a key element of any safety program. A head injury can impair an employee for life or it can be fatal. Wearing a safety helmet or hard hat is one of the easiest ways to protect an employee's head from injury. Hard hats can protect employees from impact and penetration hazards as well as from electrical shock and burn hazards.

Employers must ensure that their employees wear head protection if any of the following apply:

- Objects might fall from above and strike them on the head.
- They might bump their heads against fixed objects, such as exposed pipes or beams.
- There is a possibility of accidental head contact with electrical hazards.

Some examples of occupations in which employees should be required to wear head protection include construction workers, carpenters, electricians, linemen, plumbers and pipe fitters, timber and log cutters, welders, among many others. Whenever there is a danger of objects falling from above, such as working below others who are using tools or working under a conveyor belt, head protection must be worn. Hard hats must be worn with the bill forward to protect employees properly.

In general, protective helmets or hard hats should do the following:

- Resist penetration by objects.
- Absorb the shock of a blow.
- Be water-resistant and slow burning.
- Have clear instructions explaining proper adjustment and replacement of the suspension and headband.

Hard hats must have a hard outer shell and a shock-absorbing lining that incorporates a headband and straps that suspend the shell from 1 to 1¼ inches (2.54 cm to 3.18 cm) away from the head. This type of design provides shock absorption during an impact and ventilation during normal wear.

Protective headgear must meet ANSI Z89.1-2003, ANSI Z89.1-1997 or ANSI Z89.1-1986 for the general and maritime industries. The construction industry requires helmets used for the protection of employees against impact and penetration of falling and flying objects to meet the specifications contained in ANSI Z89.1-1969, and helmets for the head protection of employees exposed to high voltage electrical shock and burns must meet the specifications contained in ANSI Z89.2-1971.

Types of Hard Hats

There are many types of hard hats available in the marketplace today. In addition to selecting protective headgear that meets ANSI standard requirements, employers should ensure that employees wear hard hats that provide appropriate protection against potential workplace hazards. It is important for employers to understand all potential hazards when making this selection, including electrical hazards. This can be done through a comprehensive hazard assessment and an awareness of the different types of protective headgear available.

Hard hats are classified according to the specific impact (types) and electrical performance requirements they are designed to meet (classes). All helmets will meet either Type I or Type II requirements and then shall be further classified by class.

- Type I. Helmets intended to reduce the force of impact resulting from a blow only to the top of the head (vertical impact).
- Type II. Helmets intended to reduce the force of impact resulting from a blow that may be received off center (side impact) or to the top of the head.

Note: ANSI Z89.1-1997 eliminated the old Type 1 and Type II (full brim vs. no encircling brim) design designations. ANSI Z89.1-1986 specified the helmet classes as A, B and C. The 1997 ANSI standard (Z89.1-1997) changed these helmet classes to G, E and C.

- **Class G** (General). Class G helmets are intended to reduce the danger of contact exposure to low-voltage conductors. Test samples are proof-tested at 2,200 volts (phase to ground).